

# **Cityscape User Manual**

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# 1: Setting Up and Taking a Panoramic Photo

## 1.1: Setting up the Gigapan Robot

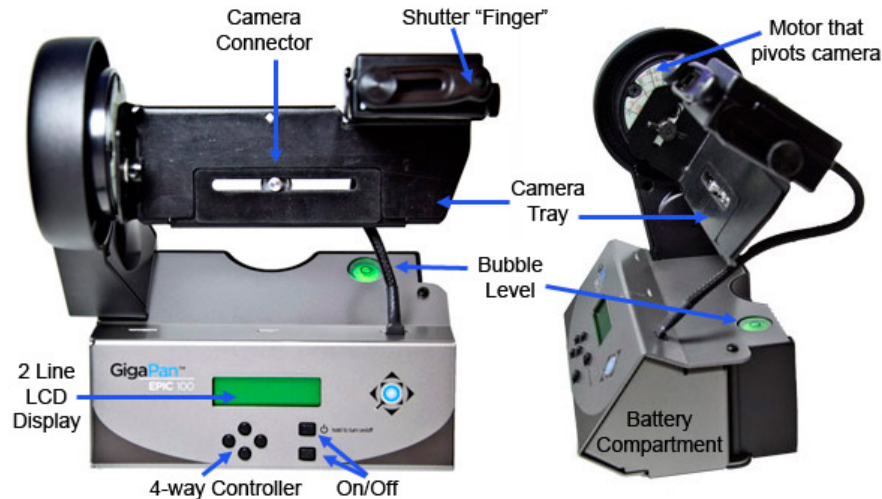


Figure 1: The Gigapan Robot

### 1.1.1: Attaching the Camera

The first step in using your Gigapan Robot is to mount the camera onto the robot.

This is done by screwing the camera body onto the camera connector screw; if the camera doesn't fit you can adjust how far back the camera sits by loosening the two screws underneath the camera tray and sliding the camera connector back.

Next, align the shutter finger with the shutter button on the camera ensuring the finger is firmly resting on the shutter button.

Open the battery compartment and slide the battery pack all the way in and plug the battery connector into the socket. The battery pack will only fit in one way.

### 1.1.2: Attaching the Gigapan Robot to a Tripod

Attach the robot to your tripod by screwing the tripod's mounting screw into the base of the Gigapan Robot. Adjust the legs of the tripod to level the Gigapan Robot.

Now press the OK button until the Gigapan robot turns on.

### 1.1.3 Set up the Field Of View

To set up the field of view for your camera, press the up or down arrow in the 4-way controller until the options menu appears, Press the OK button.

The Gigapan robot will now tell you what the current Field Of View (FOV) is and ask if you would like to set a new FOV. Press the OK button to change the FOV.

Simply follow the instructions onscreen to set up the FOV for your camera.

## **1.2 TAKING THE GIGAPAN PHOTO.**

After having attached and set up the camera, you are now ready to take a panoramic photo using the Gigapan Robot.

### **1.2.1 Taking a new Panorama**

Scroll through the menu using the up and down keys until you get to the New Panorama menu. Select this option by pressing the OK button.

Use the arrow keys on the 4-way controller to set the upper left corner of the panorama you wish to take and press the OK button. Set the lower right corner of the panorama in the same way, using the arrows of the 4-way controller. Make a note of how many rows high the panorama is and press the OK button to continue.

At this point, you have the option to press the ok button to make the Gigapan Robot move the camera to show you the 4 corners and mid-point of the panorama you are about to take or you can press the X button to skip this step.

The robot will now ask if you wish to take x pictures, where x is the number of photos required to cover the desired area chosen. Press OK to accept and the Gigapan Robot will now go through a checklist.

After the checklist is completed, the Gigapan robot will start taking the photos, now you can sit back with a book and wait.

### **1.2.2 Taking a 360° Panorama**

Scroll through the menu using the up and down keys until you get to the 360° Panorama menu. Select this option by pressing the OK button.

Taking a 360° panorama is a similar process to taking a normal panorama. The only difference is that you don't set the bottom right corner; instead, you set the height of the panorama you wish to take.

Use the arrow keys on the 4-way controller to set the upper left corner of the panorama you wish to take and press the OK button. Set the bottom of the panorama in the same way, using the arrows of the 4-way controller. Make a note of how many rows high the panorama is and press the OK button to continue.

At this point, you have the option to press the ok button to make the Gigapan Robot move the camera to show you the 4 corners and mid-point of the panorama you are about to take or you can press the X button to skip this step.

The robot will now ask if you wish to take x pictures, where x is the number of photos required to cover the desired area chosen. Press OK to accept and the Gigapan Robot will now go through a checklist.

After the checklist is completed, the Gigapan robot will start taking the photos, now you can sit back with a book and wait.

### 1.2.3 After the panorama has been taken

Once the Gigapan robot has completed taking your panorama, you can now turn the Gigapan Robot off by pressing and holding the OK button until the LCD display says Goodbye.

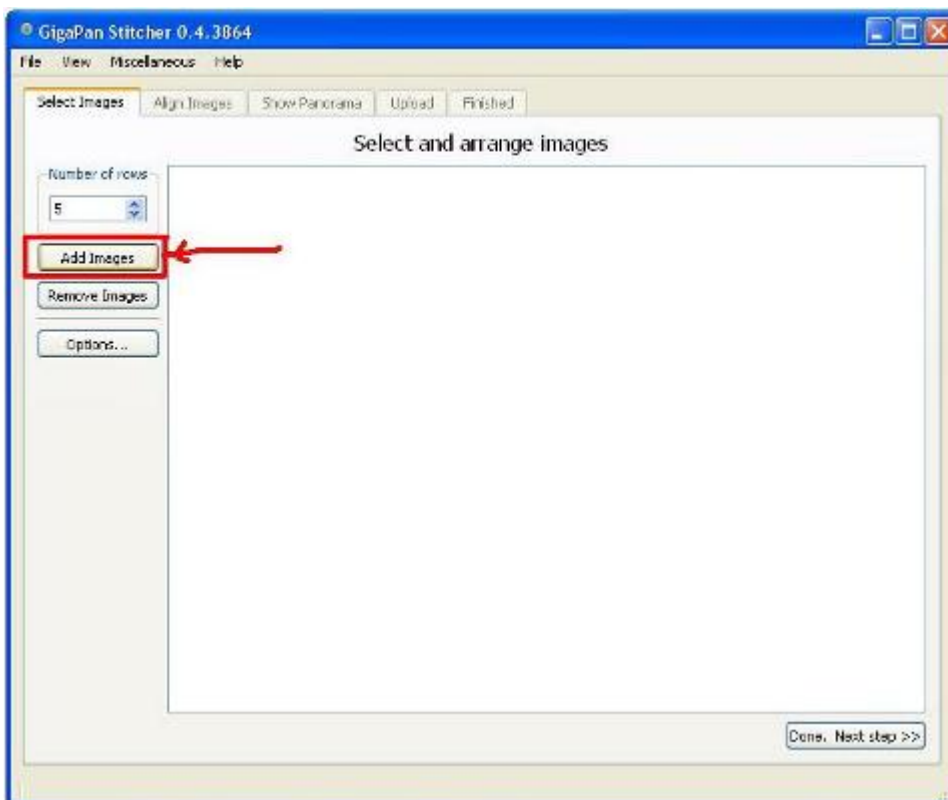
You can now move the shutter arm away from the camera and unscrew the camera from the Camera Tray.

Open the battery door and unplug the batteries, sliding them out of the holder.

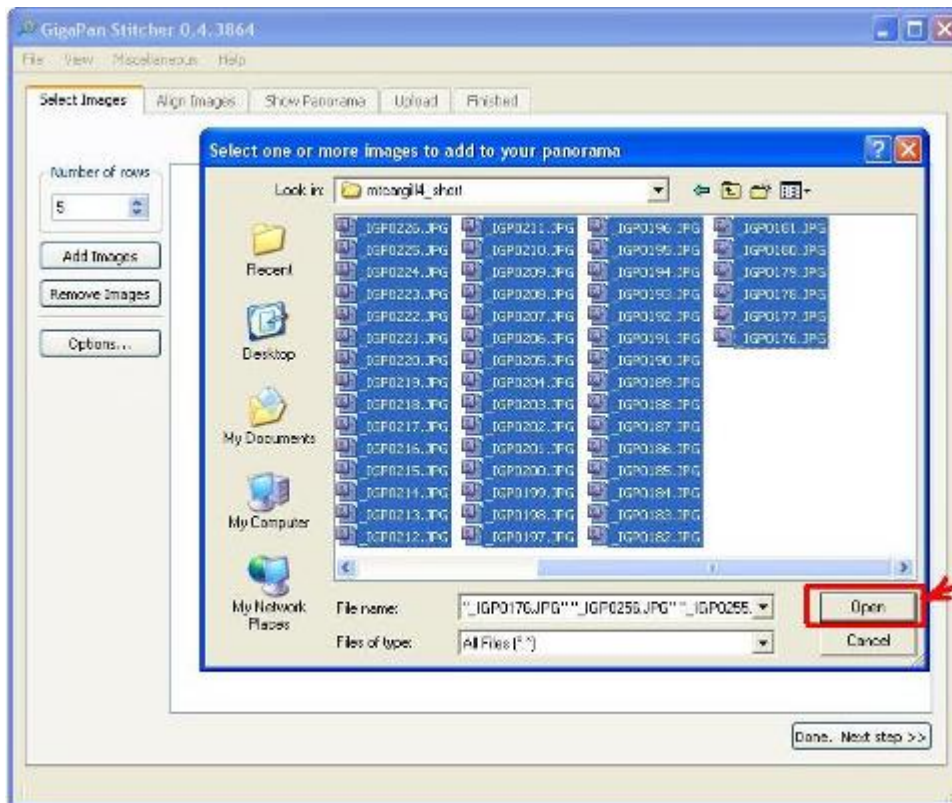
## 1.3 CREATE THE GIGAPAN IMAGE PYRAMID

To create the Gigapan Image Pyramid, you first need to load the images onto the computer. This can be done by either inserting the cameras memory card into a card reader attached to the computer, or by plugging the camera into the computer in via a USB cable and transferring the images across.

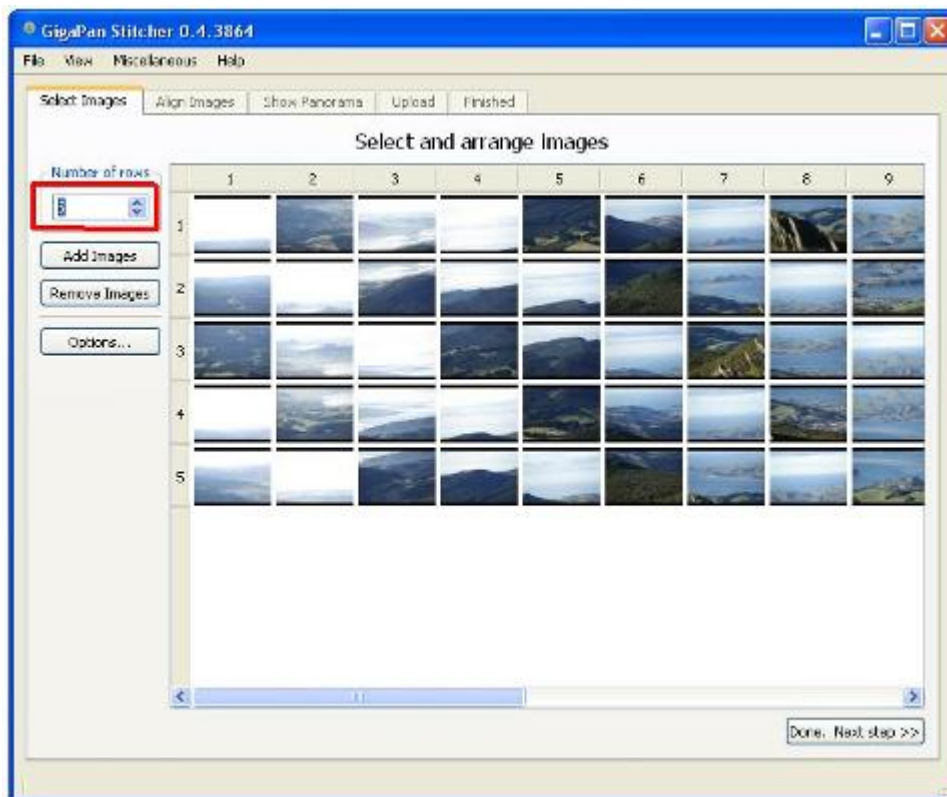
Next, you need to start up the Gigapan Stitcher Software and select the Add Images Button.



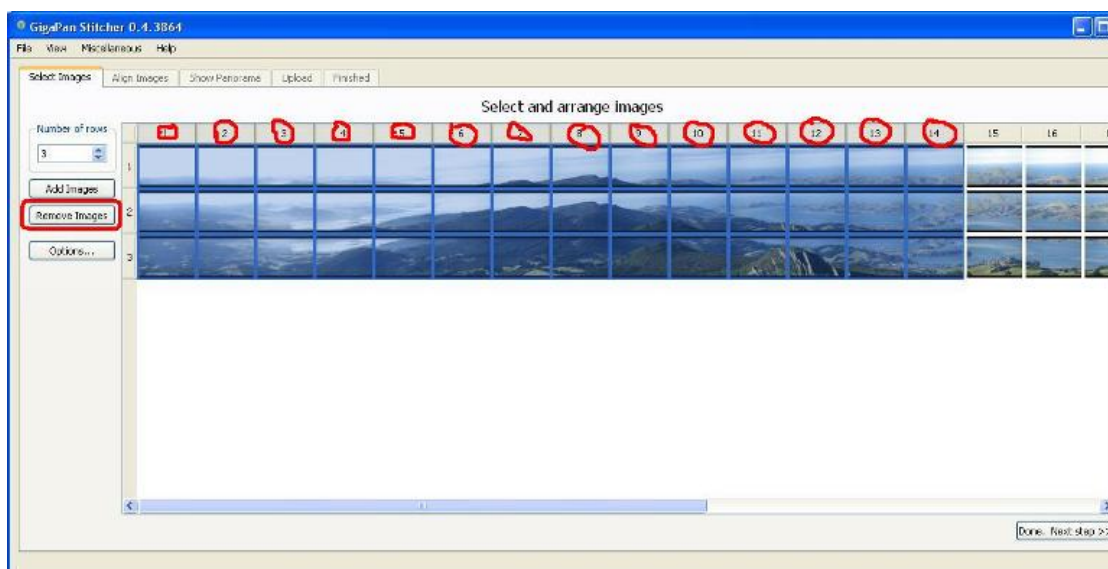
In the popup window, navigate to where you transferred the images to and select all the panorama images.



Now you need to set the number of rows in the panorama to the height of the panorama you took.

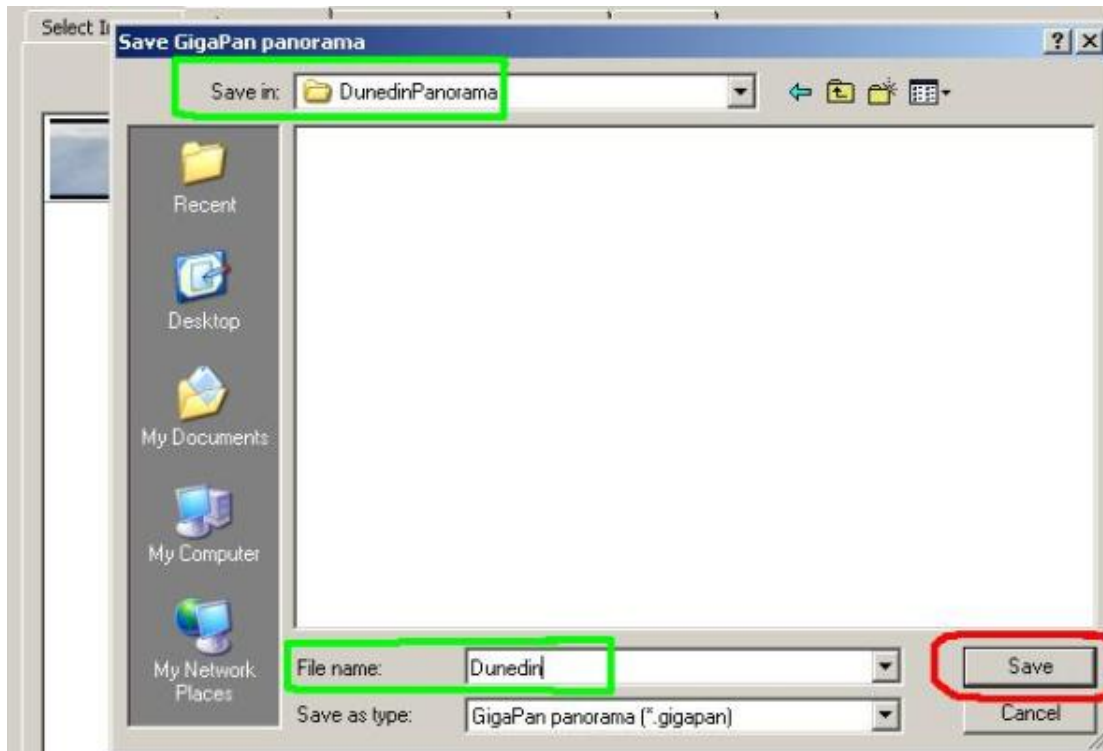


If there are extra images in your panorama, you can select these images by an entire row or column by clicking on the row or column numbers, or clicking an individual image. Then select the Remove Images Button to exclude them from the final panorama.



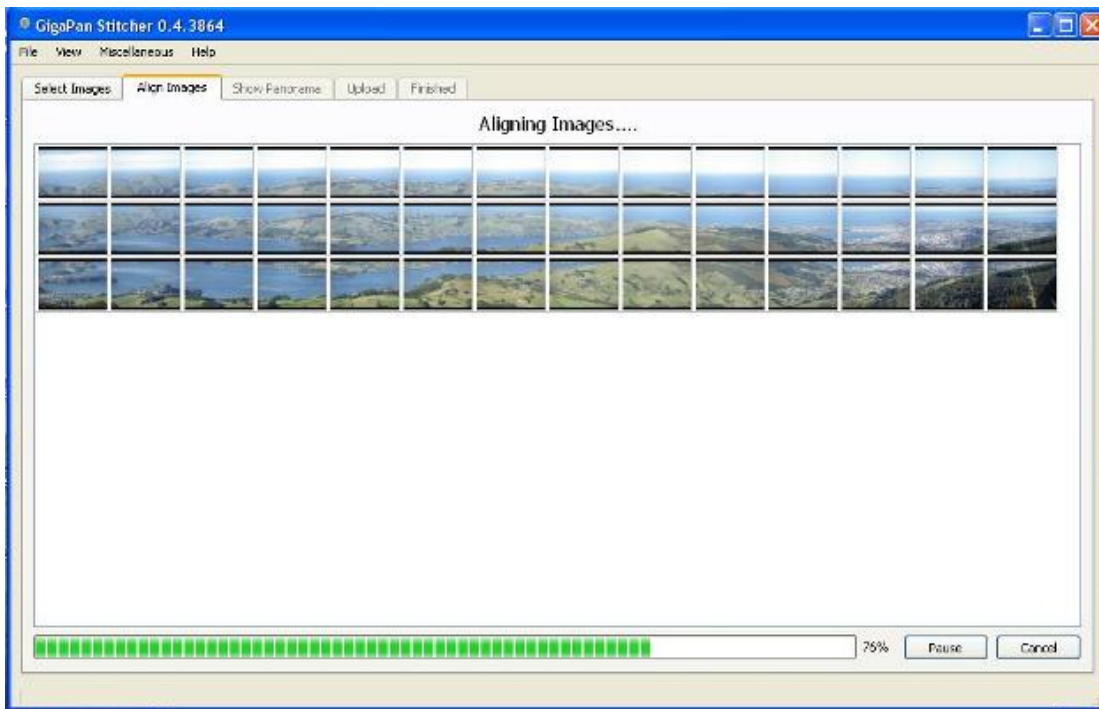
Now, press the “Done. Next Step” button, at the lower right of the window, to continue.

Next you will have to create a folder to save the resultant images, called “DunedinPanorama” in this example, to save the stitched images to. An appropriate file name is needed as well. Then click the Save button.

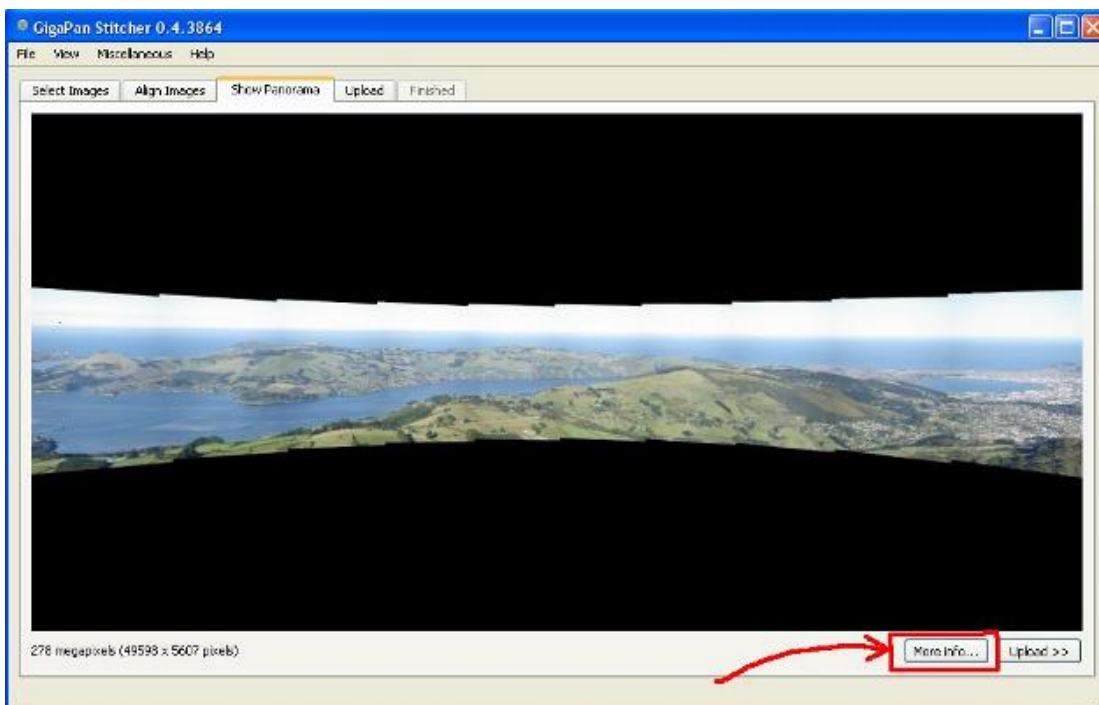


The GigaPan Stitcher software will now align the images and create the image pyramid for you. This process will vary in time from hours to a day or two to complete if you have taken many images, e.g. 800 pictures. As of October 2009 the GigaPan Stitcher, version 0.4.3864, program was written for single core computing only. The speed of the computer will affect the length of time to a degree but the greatest speed improvement would be to have a RAID 0 setup as well. This is not covered.

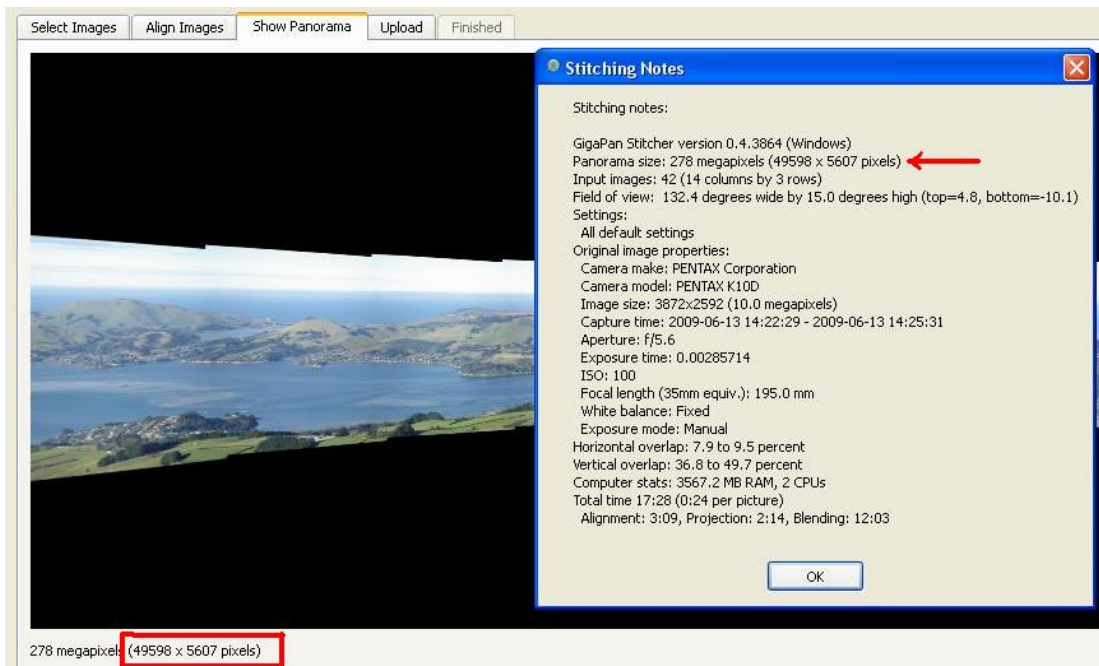




Once the images are aligned, you can get the required data from the Stitching Notes screen by clicking the “More Info...” button.



As an example, the information required is the Panorama size: 49598 x 5607, given as width x height. The size will vary between panoramas. The size is required when entering a new panorama into the database.



#### NOTE: Panorama Size Limitation

To display a reasonable image, the final panorama image width to height ratio should not be greater than 5:1. If it is greater, then a very skinny panorama would be displayed.

## 1.4: CREATE A RAW OR TIFF IMAGE

Now you need to create a RAW or TIFF image file of this stitched together image that was created in the previous step. This is used later on to map grid co-ordinates to points of interest.

Click on “File” then “Export stitched image to”, you have a choice of TIFF or RAW format. This can take a lot of time, but not as long as it took to stitch the image.

Saving as a TIFF file, results in a smaller file size than a RAW format file. This is also easier to open up in Photoshop if it is small enough. See comment below.

If saving as a RAW file, you will get the following message afterwards explaining how to open the file up in Photoshop. This may be the best file to create if resulting image file is going to be large, i.e. over 2 GB. This will also depend on the amount of memory in your computer.



## **2: The Hardware**

### **2.1: COMPUTER.**

During development of the Cityscape program, we have tested on Intel Pentium 4 2.6GHz powered computers with 1GB Ram and an NVIDIA GF4 MX440 graphics card. These machines ran fine but would only allow us to use one monitor or projector, due to having a single AGP output on the graphics card. We have also tested on a Intel Core 2 Duo 3.0GHz E6850 powered computer with 4GB ram and an NVIDIA GeForce 8400 GS graphics card. This card allowed us to run dual monitors or projector due to having a single DVI output that we could split into two outputs.

All computers were running Windows XP SP3

Final computer configuration for deployment is .....

### **2.2: PROJECTORS**

The projectors we have tested with are an NEC 8151W. This is a widescreen unit. The other projector we have tested with is a Mitsubishi SL2U.

We have received two Canon projectors for deployment. One is a SX80 HD unit and the other is an LV-7265. Both are 4:3 data projectors. We have tested these successfully with the SX80 unit being used for displaying the panorama and the LV-7265 for displaying the Gallery.

### **2.3: USER CONTROLS.**

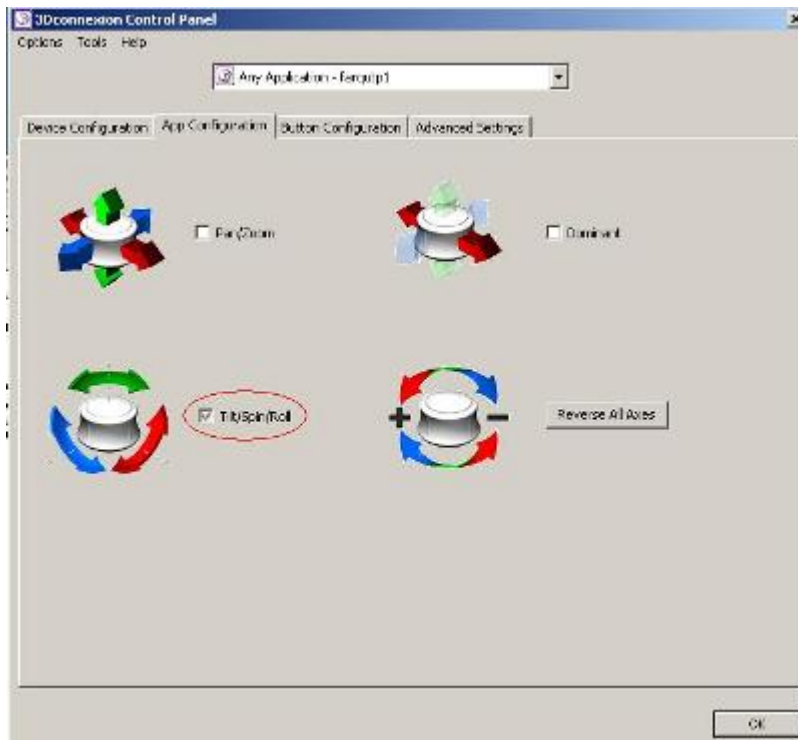
#### **2.3.1: 3D Mouse Control**

We use a 3D Connexion Space Navigator mouse. This is for exploring the panorama, scrolling through Library images and frames on the easel work area and positioning the framed image in the Gallery.

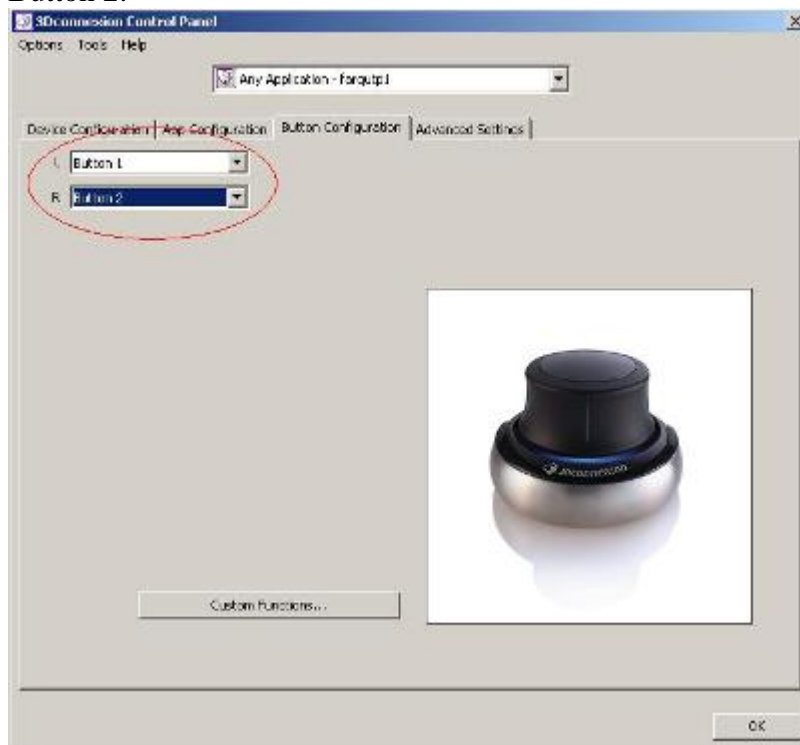
### 2.3.1.1: 3D Mouse Setup

Install the 3D Connexion software then we have to set some options in the 3D Connexion Control Panel then save the configuration. See the steps below.

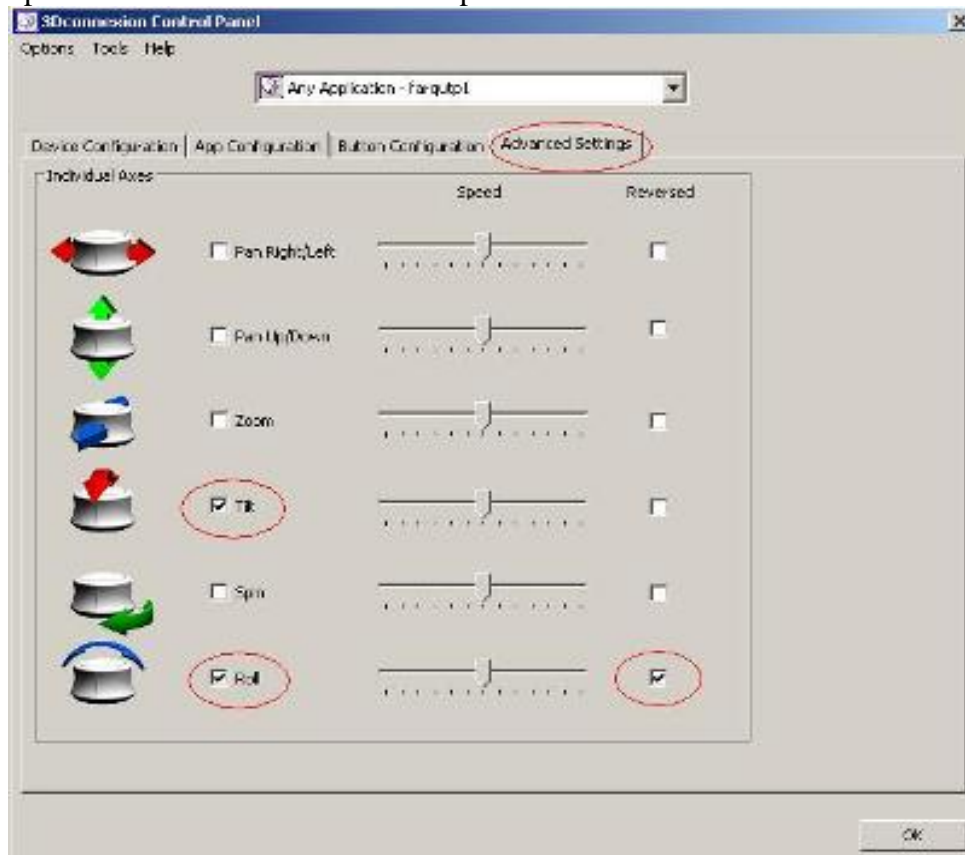
1. Go to the App Configuration tab and uncheck all the options except the Tilt/Spin/Roll, make sure that is checked.



2. Go to the Button Configuration tab and set the L option to Button 1 and the R option to Button 2.



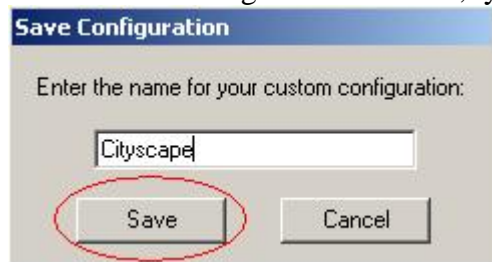
3. Go to Advanced Settings and under the Individual Axis column, check the Tilt and Roll options. Also check the Reversed option for Roll.



4. Click on the Options tab at the top and select the Save As option.



In the Save Configuration window, type “Cityscape” then click the ‘Save’ button.



### 2.3.2: SELECT AND UNDO BUTTONS.

This is a two part unit. We used a ROCK USB Optical Scroll mouse. This is a cheap generic mouse as we “modded” it to take push buttons instead of using the standard mouse clicks. We unsoldered the left and right mouse click micro switches from the mouse circuit board and wired in two push button switches that we had purchased from VideoTech in Dunedin. These two switches became the Select and Undo buttons.

The mouse is house in a custom made 18mm x 85mm MDF housing, glued and screwed together. Overall length and width is 240mm x 103mm. The ROCK mouse base is screwed with 2 small screws onto a 6mm thick MDF base which is then screwed to the underside of the main MDF housing using 6 small screws.

### 2.3.3: LARGE ALUMINIUM SCROLL WHEEL.

The large aluminium scroll wheel contacts the small scroll wheel on the ROCK mouse that the Select and Undo buttons are attached to. It is 102mm overall diameter. Width varies between 10mm and 12mm. Don’t ask why! This is used for zooming in and out of the panorama. An 8mm diameter aluminium rod, 108mm long, is glued into the centre of the aluminium wheel with Selleys Quicktite Superglue. A rubber o-ring is glued, using Superglue, in the groove that was machined around the outer edge of the aluminium scroll wheel.



**Adjustment:** *The contact between the aluminium scroll wheel and the mouse scroll wheel may diminish over time, hopefully due to over use. This can be rectified by following the steps below.*

- 1. Disconnect the USB cords for the 3D mouse and standard mouse from the computer.*
- 2. Peel back the top, bottom, left and right edges of the vinyl instruction sheet that is on the MDF top.*
- 3. Unscrew the 4 screws in the MDF top and remove the top.*
- 4. Unscrew the aluminium scroll wheel MDF housing from the 3 metal angle brackets. DON'T unscrew the brackets from the top!*
- 5. Unscrewing the 6mm MDF base from the MDF housing.*
- 6. Unscrew the brown screw that holds the mouse top cover down. This is lightly screwed into the 6mm MDF base.*
- 7. Remove the mouse cover and unscrew the 2 small screws, one on each side of the base of the mouse.*
- 8. Place a sheet of two of paper under the mouse base. This will lift the mouse up closer to the aluminium scroll wheel.*
- 9. Re-assemble in reverse order to the disassembly procedure and test. BE CAREFUL THAT YOU DO NOT OVER TIGHTEN ANY SCREWS AND STRIP THE SCREW HOLES IN THE MDF PARTS. If this happens, fill the holes with glue and a matchstick or two, let dry and re-screw.*

## 2.4: CYLINDRICAL HOUSING.

The cardboard cylinder is 600mm ID with 8mm thick walls.

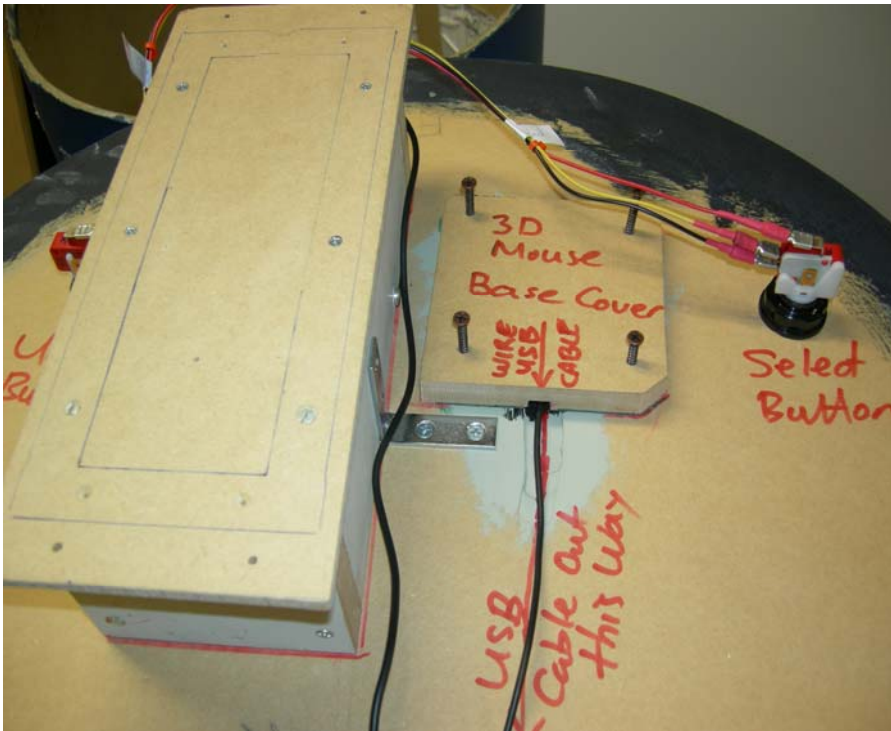


Four pieces of 45mm x 45mm wood are glued, Fullers Max Bond FastGrip, and screwed to the inside of this cylinder for strength in the 12, 3, 6 and 9 O'Clock positions.

**NOTE:** When removing and re-attaching the MDF top, the front and back edge of the cardboard cylinder needs to be pushed together about 5mm to line up the holes in the timber with the holes in the MDF top.

The user controls are attached to the underside of the 16mm MDF top. See the four images below.





This top is only screwed to the top ends of each length of strengthening timber so it can be removed if any of the user controls need serviced. The base is also 16mm MDF, screwed and glued to the base of the cylinder and timber supports.

The door is held open and closed using a push activated magnetic catch. This is located in the bottom right corner of the door.

The cylinder is painted in Taubmans Suede paint.

### **3: Creating the database**

#### **3.1: DATABASE REQUIREMENTS.**

##### **3.1.1: What is needed?**

To run the Cityscape program, the place where all the images created by the GigaPan Stitching program were saved, along with the size of the panorama, need to be saved into a database for retrieval by the Cityscape program. The database system required is Microsoft SQL Server Management Studio 2005 or 2008 in either the Express version, which is free, or the Professional version. This help file does not go as far as explaining how to install Management Studio. However, it does tell you how to setup the Panorama database and associated code, called Stored Procedures, to help run the Cityscape program.

#### **3.2: CREATING THE DATABASE.**

##### **3.2.1: What to install.**

There are two sql scripts to be run. These are in the “Cityscape Panorama SQL Scripts” folder, located on the supplied ‘Cityscape’ CD.

The first script, called “Cityscape Panorama Database Tables” installs the tables that all the panorama image data is stored on.

This database is called “Panorama”.

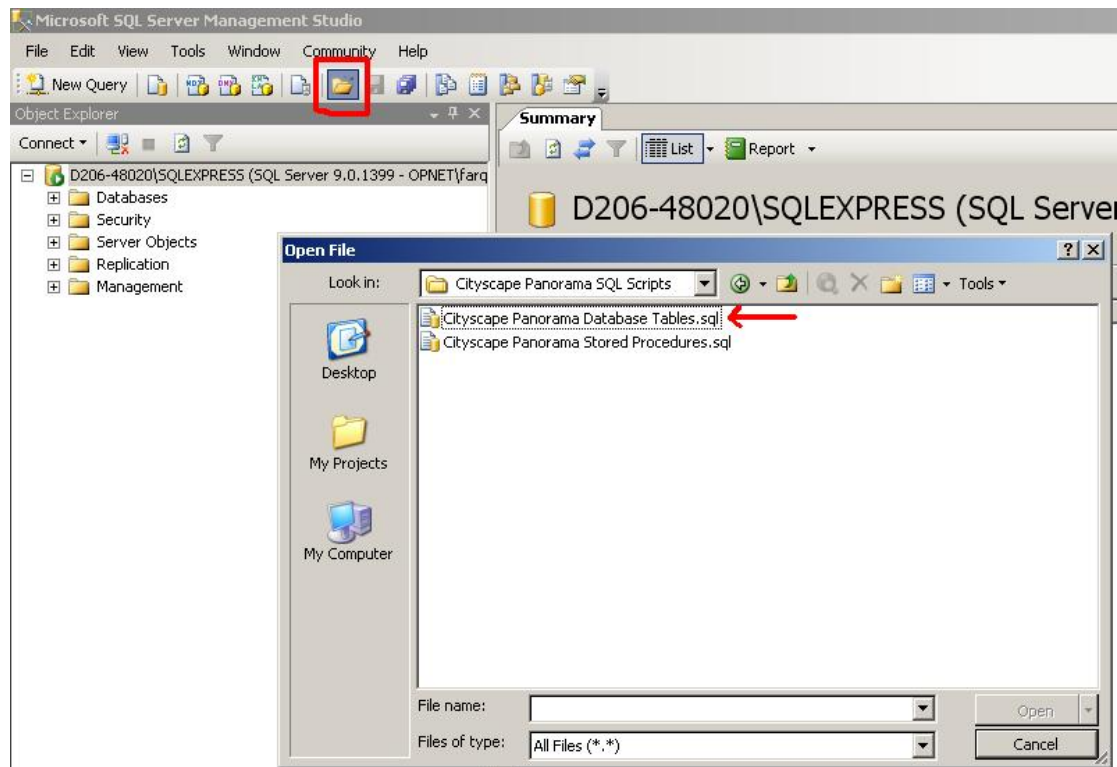
The second sql script, “Cityscape Panorama Stored Procedures”, installs all the Stored Procedures required.

**DO NOT CHANGE ANY OFF THESE, OR ELSE YOU WILL BREAK THE CITYSCAPE PROGRAM.**

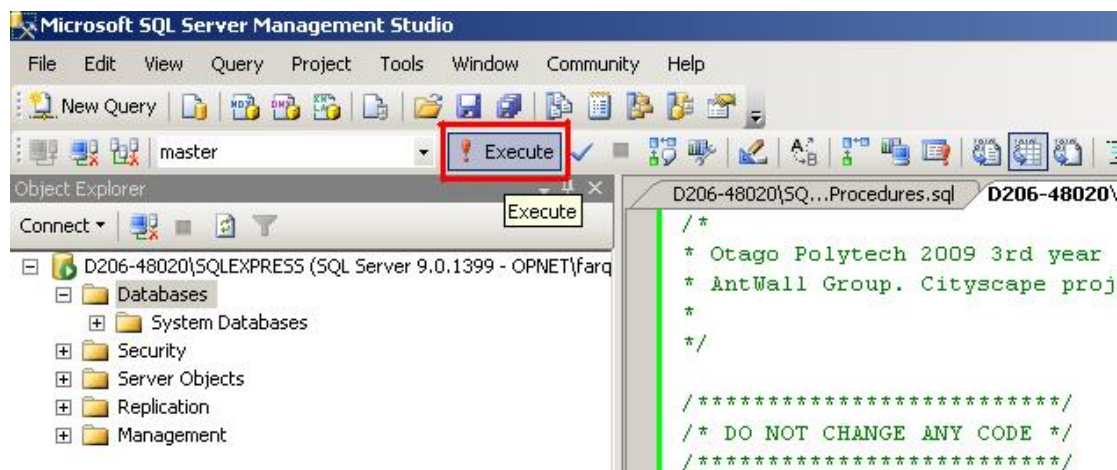


### 3.2.2: How to install.

Start up Microsoft SQL Server Management Studio. Click the Open File button on the toolbar, as shown in the image below circled in red. Browse to the “Cityscape Panorama SQL Scripts” folder and select the “Cityscape Panorama Database Tables” file.

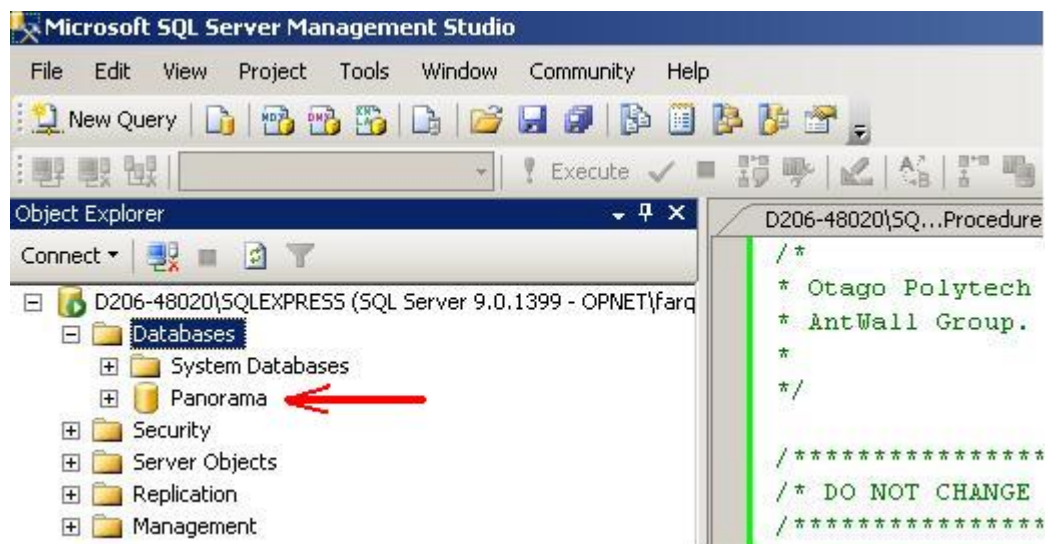


Next click the “Execute” button, as shown in a red box, and this will install the tables.



Now repeat the process for selecting and executing the “Cityscape Panorama Stored Procedures” file.

If you expand the Databases folder on the left, as highlighted in blue, you should see a database called Panorama. See red arrow in image below.



### 3.2.2: Get The Server Name.

To install the panorama images information into the database, you will first need the server name. An example is shown in the image below, in the red square. The first part is the computer name followed by the backslash and then the instance name of SQL Server Management Studio. This is used to connect the Cityscape Authoring program and the Cityscape Panorama program to the database.



## **4: Installing the Cityscape program.**

### **4.1: LOOK ON THE SUPPLIED CD LABELLED ‘CITYSCAPE’**

#### **4.1.1: Installation**

The Cityscape CD contains the setup files required. They are in the ‘setup.exe’ installer file. Double click this and the installation will begin.

Please install into the default folder location, ‘C:\Program Files\Antwall\Cityscape\’ that comes up in the Select Installation Folder screen. This will make it easier for adding new folders and images if you wish.

#### **4.1.2: What is installed?**

Within the ‘C:\Program Files\Antwall\Cityscape\’ folder location there are multiple folders.

**DO NOT DELETE ANY OF THESE FOLDERS, OR THE IMAGES CONTAINED IN THEM, OTHERWISE THE PROGRAM WILL NOT WORK!**

The first is the Cityscape Authoring program, located in ‘C:\Program Files\Antwall\Cityscape\Authoring\Cityscape Authoring.exe’. This is the program you use to insert images into the database and associated information.

Next is the folder where you put all your related images into, ‘C:\Program Files\Antwall\Cityscape\CityscapeImages’.

This folder contains three other folders, FocusImageCircle, Frames and LibraryImages.

1. The FocusImageCircle folder is used to contain images a user of the Cityscape program will have created.
2. The Frames folder contains images of frames, like picture frames, that a user can select to frame a focus circle image or image chosen from the LibraryImages folder when using the Cityscape program.
3. The LibraryImages folder contains multiple folders pertaining to PointOfInterest. These are named in relation to known areas or buildings. You may add more images to an existing folder and then add them into the database. You may also create a new folder for a new PointOfInterest and put images in there. Name this folder with the same name you are going to call the PointOfInterest when adding it into the database. This is covered later on.

The last folder is the Panorama folder, ‘C:\Program Files\Antwall\Cityscape\Panorama’. This contains one folder with images in it. **DO NOT DELETE FOLDER OR IMAGES!** It also contains the ‘Cityscape Panorama.exe’ file. This runs the main Cityscape program. It also contains the ‘TDx.TDxInput.dll’ file, it is used by the 3D Connexions mouse. **DO NOT DELETE IT!**

#### **4.1.3: To Remove or Repair the Cityscape program.**



Double click the setup.exe file as this will give you the option to remove or repair the program. Alternatively you can use the Windows Add/Remove Programs option in the Control Panel.

## **5: Installing the panorama photograph data.**

### **5.1: THE CITYSCAPE AUTHORIZING PROGRAM.**

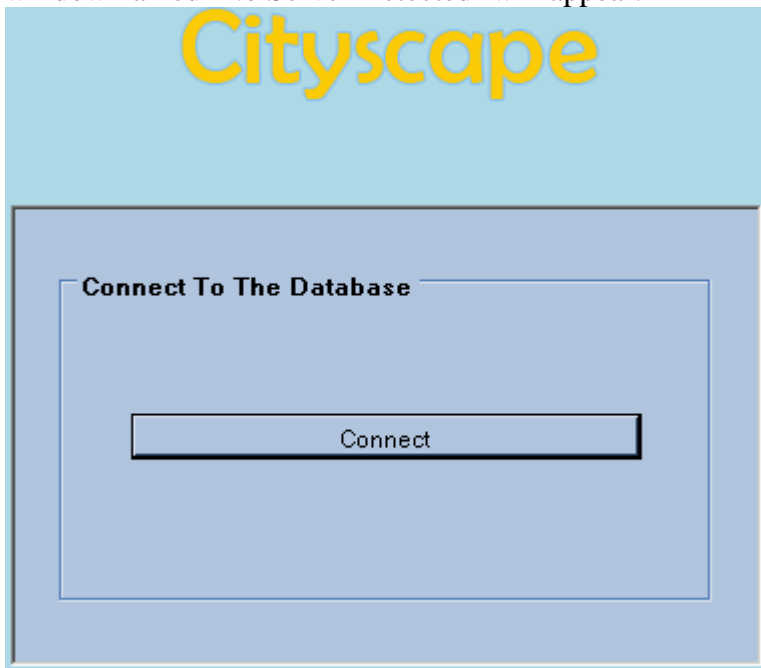
#### **5.1.1: What is it?**

The Cityscape Authoring program performs four main tasks.

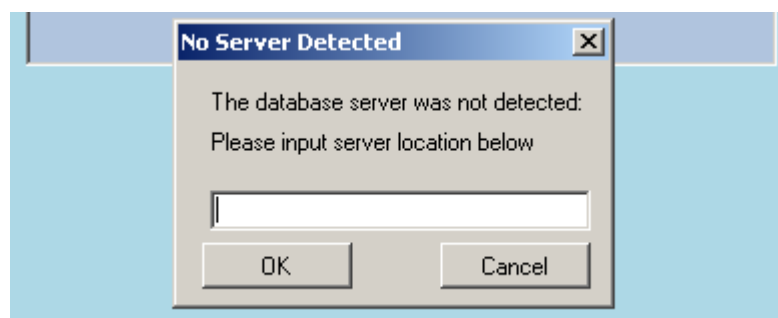
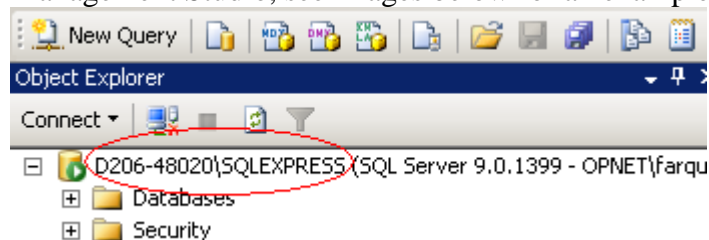
1. First, it allows you to easily insert the required panorama images, associated images and information into the Panorama database so the Cityscape program will run. These tasks include Insert New Panorama, Insert Point of Interest, Insert Grid Locations, Insert Library Images and Insert Frame Images.
2. Perform maintenance by deleting old panorama images, associated images and information from the database.
3. Recreate a panorama from any previous day.
4. You can change the panorama to be displayed and see relevant information about the panorama, like size and any associated Library and Gallery images and Points of Interest. By changing the Panorama to view, also changes the Configuration.dat file so when the Cityscape program is next run, that particular panorama will be displayed.

#### **5.1.2: Connect to the database.**

When installing and using the program for the very first time, follow these instructions. Start the Cityscape Authoring program by going to either the Start Menu, under Cityscape – Cityscape Authoring or go to the 'C:\Program Files\Antwall\Cityscape\Authoring\' folder and double click on the 'Cityscape Authoring.exe' file. The first time you click the 'Connect' button a new window named 'No Server Detected' will appear.



Type the computer and server instance name as displayed in your version of SQL Server Management Studio, see images below for an example, into the text box, and then click OK.



If you made a mistake with the server name, then another window called 'Bad Server Name' will appear. Simply recheck the server name and correct the mistake. Once you have logged in successfully, a multi tabbed screen will appear. See section 5.1.2.

### 5.1.2: Insert New Panorama

The next screen to display will be for inserting new panorama images and information.



There are three text boxes you need to type information into.

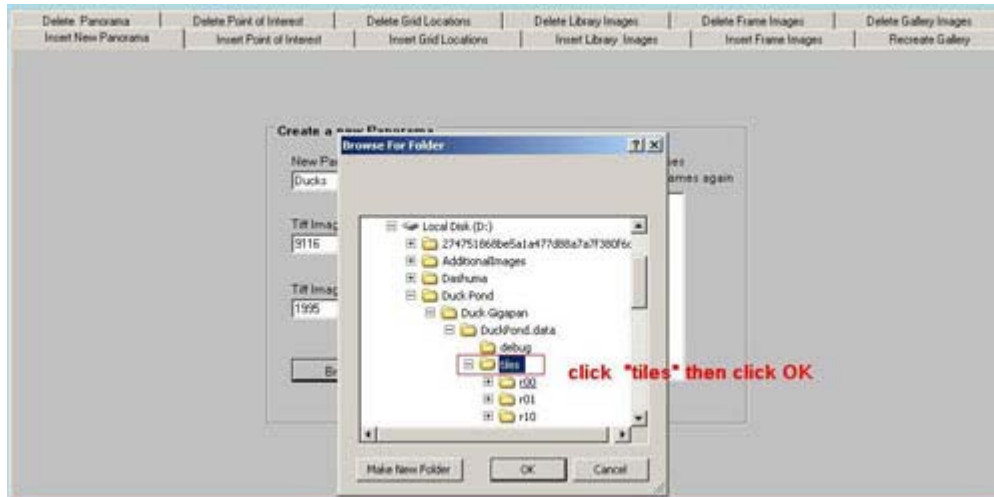
The first is the New Panorama Name. You will need to use a unique name for the panorama because you cannot have two panoramas using the same name. The box on the right displays any existing panoramas in the database.

#### NOTE: Panorama Size Limitation

To display a reasonable image, the final panorama image width to height ratio should not be greater than 5:1. If it is greater, then a very skinny panorama would be displayed.

The second and third boxes are for the Image Width and Image Height, in pixels, of the stitched image, this information is available from the Stitching Notes information box that was viewable after the GigaPan Stitching program had finished.

Once this information has been entered into the boxes, then click the “Browse for a ‘tiles’ folder” button. A “Browse for Folder” window will pop up. Go to the place you saved the panorama images when you used the GigaPan Stitching program, and navigate down to the folder called “tiles”.



Click on this folder once and it will expand out revealing other folders. DON'T TOUCH OR CLICK THESE FOLDERS. Click the OK button on the “Browse for Folder” window. After some time, between 5 and 10 seconds, a message will pop up saying the new images for the panorama have been successfully inserted.

### 5.1.3: Insert Point of Interest

This is where you insert Points of Interest that are on the panorama. Generally they are known landmarks, buildings or areas. The Address and General Information fields are optional. Click the Insert New Point of Interest button to enter each name.

A Point of Interest can be used with other panoramas and must have unique names.

Existing Points of Interest are shown in the box to the right.

You link a Point of Interest to the panorama by assigning a grid location relating directly to the panorama image. This is done in the next step, Insert Grid Locations.

### 5.1.4: Insert Grid Locations

This is where you insert grid locations that are taken directly from the large TIFF or RAW image file that you create after the Stitching program has finished.

Each Grid Location is 100 x 100 pixels

As many Grid Locations as you like can be mapped to a Point of Interest.

First, open the TIFF or RAW image in Photoshop. This could take several minutes!

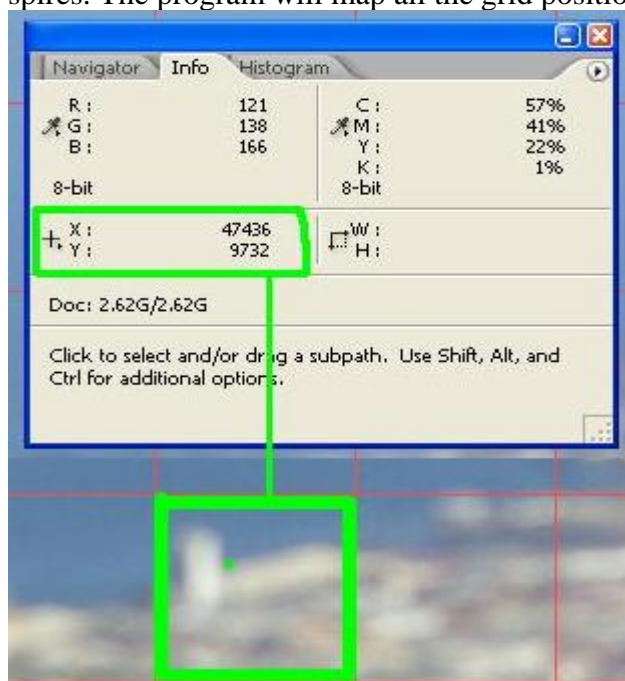
Display the image in actual size and full screen mode.

Click on Edit, Preferences then the “Guides, Grids and Slices” option. In the Grid option, select Style as Lines. Set Gridline every 100 Pixels and Subdivisions is 1.

Next go to View, then Show, and then select Grid from the options. This will display the grid over the TIFF image.

Next press the F8 key to display the Info window. This will display the X and Y co-ordinates of the mouse. The X denotes the horizontal distance from the left. The Y denotes the vertical distance down from the top. As shown below in the green boxes, the mouse is at position X: 47436 by Y: 9732 pixels. You may also want to show the Ruler, remember to set the divisions to Pixels.

By dividing these numbers by 100, would give a grid position of 474, 97. So anywhere in the lower green square would be in grid position 474, 97. It is these grid positions that are entered into the database. It is best to write down the top left grid position and the bottom right grid position of the area you want mapped to a Point Of Interest. You may want to break up a Point Of Interest into shapes instead of a large square or rectangle. This is common if you are mapping a church with spires. The program will map all the grid positions in between the top left and bottom right corner.



From the drop down boxes, select a Panorama and then select a Point of Interest.

Next, in the two text boxes below, named ‘Top Left Corner’ and ‘Bottom Right Corner’ enter the top left and bottom right grid positions of the area you want mapped. Type a comma between the X and Y value. e.g. 474,97. See image below with an example of 85,16 and 90,21.

Top Left Corner:	<input type="text" value="85,16"/>
Bottom Right Corner:	<input type="text" value="90,21"/>
<input type="button" value="Generate Grid Positions"/>	
<input type="button" value="Insert Grid Locations"/>	

Once you have typed in an area you want mapped to a Point Of Interest, click the ‘Generate Grid Positions’ button. This will calculate all the other grid positions in between.

If you have multiple areas to map, like a complicated church shape, repeat the above steps of entering the top left and bottom right grid position and clicking the ‘Generate Grid Positions’ button.

Once you have been added all the areas you want for a Point Of Interest, click the 'Insert Grid Locations' button, and all the grid locations will be added to the database and redisplayed in the text box to the right as confirmation.

### 5.1.5: Insert Library Images

Library Images are displayed when a user of the Cityscape program moves the Focus Circle over an area that is mapped with a Grid Location. It is these Library Images that a user can select from, to frame, and then display in the Gallery.

**NOTE: The images used in the Library need to be a size of 128 x 128 pixels, with a resolution of 96 pixels.**

For ease of insertion, create a folder called Cityscape Images. Within this folder, create a new folder for every Point of Interest name you have entered and have Library Images for. Place each Library Image in their respective Point of Interest folder.

Once you have all the Library Images in their folders, proceed to entering them into the database.

Select a Point of Interest from the drop down list.

Entering information for the Date/General info and the Photo Source is optional.

Next click the "Browse to the images you want to insert" button. Open the folder with the images you want to insert, click on any image and then click OK. This will insert the all the image names and locations into the database within that folder.

Repeat for all other Point of Interest Library Images.

To add more Library Images to an existing Point of Interest, just add the images into the correct folder and repeat the above insertion instructions. The program will only enter images that are not already entered.

**NOTE:** Users of the Cityscape program can create a new Point of Interest, up to 25 new Grid locations in a 5x5 pattern, and a Library Image, just by placing in the Gallery, the Focus Circle image with a frame around it. This new Library Image is placed in a folder 'C:\Program Files\Antwall\Cityscape\CityscapeImages\FocusCircleImages' that is created on the C: drive at installation time.

### 5.1.6 Insert Frame Images

Frames images are selected by the user to place around a selected Library Image before displaying in the Gallery.

**NOTE: The images used for Frames need to be a size of 128 x 128 pixels, with a resolution of 96 pixels.**

A selection of these frame images are supplied with the Cityscape program, located in the Frames folder.

Place the Frames folder inside the Cityscape Images folder.

Place any new frame images into this Frames folder.

Click onto the "Browse to the frame images you want to insert" button. Go to the Frames folder and open it. Click on any frame image and then click OK. This will insert any new frame images. The program will only enter images that are not already entered.

## 6: Re-Creating a Gallery

This will display all the framed images in the Gallery for a selected day. You may get the choice of more than one panorama for a particular day. You can only select one at a time.

First select a date. Next select a panorama, then click the “Get Gallery Images” button. This will bring up another window of the Gallery and all the framed Library Images chosen for that day.

## 7: Deleting a Panorama.

Deleting a panorama and all associated images, Points of Interest and Grid Locations from the database is a multi step exercise. This is due to the fact that Points of Interest and Library Images can be associated with more than one panorama.

**NOTE:** As a precautionary measure, images are not actually deleted from the computer. You will have to go through and delete them manually.

First you need to delete any Gallery images that are from the panorama you want to delete. These are selected by panorama name from the drop down list and then you click the “Delete Gallery Images” button.

Then you need to delete any Point of Interests associated with the panorama. If a Point of Interest is associated with more than one panorama, and it has Library Images used in the Gallery, then it will not be able to be deleted until those Gallery images are deleted.

Now you can delete a panorama and all its’ images.

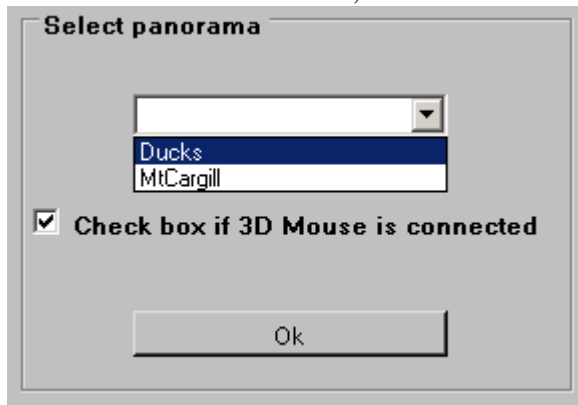
You may delete any Fame and Library Images not being used in the Gallery, at any time.

You may delete a Grid Location at any time.

## 8: Using the Cityscape Panorama program.

### 8.1: CHOOSE THE PANORAMA YOU WANT TO USE.

Using the Cityscape Authoring program, go to the tab named, 'Select Panorama To Display'. See image below. In the area where it says 'Select panorama', select from the drop down box the panorama you want. Next click in the check box labelled 'Check box if 3D Mouse is connected', if the 3D mouse is connected, then click the 'OK' button.



This will write the panorama name into the 'DBConnection.dat' file. You will also notice many details to the right regarding the size of the panorama, number of zoom levels a user will have to play with, number of Points of Interest, Library Images and Gallery Images.

### 8.2: ALTERNATIVE CONTROLS.

If the 3D mouse is not connected due to not being available or out of order then alternative controls are available by using a normal mouse and keyboard.

Mouse for panning around.

Mouse scroll wheel for zooming in and out.

Left mouse click, or the 'SHIFT' key to 'Select'.

Right mouse click or the 'CTRL' key to 'Undo'.

Left and right arrow keys to scroll the image and frame selection on the easel.

### 8.2: START THE CITYSCAPE PANORAMA PROGRAM.

Once you have set the panorama to display in the Cityscape Authoring program, start the Cityscape Panorama program. You will find this in the Start menu under Cityscape or in the 'C:\Program Files\Antwall\Cityscape\Panorama' folder.

